moving a write head from one of the pair of tracks to which data has been written to the other one of the pair of tracks while the data read-out from the memory is being stopped; and

stopping the write head from writing while the data read-out from the memory is being stopped.

17. (Amended) A reproducing method in which data is read from a disc having formed thereon a pair of concentric or spiral tracks adjacent to each other and to which a common address is given, comprising:

reading data from the disc using a read head;

storing the data read out from the disc into a memory at a first transfer rate;

detecting when the data amount stored in the memory has exceeded a first predetermined value and reading out data from the memory at a second transfer rate slower than the first transfer rate;

stopping the data storage into the memory when the data amount stored in the memory has reached a second predetermined value larger than the first predetermined value; and

moving, while the data storage into the memory is being stopped, the read head from one of the pair of tracks from which the data has been read to the other one of the pair of tracks.

REMARKS

Favorable reconsideration of the above-identified patent application in light of the foregoing amendment and the following remarks is respectfully requested.

First, Applicants' U.S. representative reports that no Form PTO-1449 was enclosed with the March 21, 2001 Office Action, notwithstanding the indication in box 17 of the PTO-326. It is therefore requested that the examiner review the entire PTO file for any Forms PTO-1449 that

should have been initialed and returned to Applicants' representative, to confirm official consideration of the corresponding Information Disclosure Statements (IDSs).

Claims 1-17 remain active in the application; Claims 1 and 5 are amended to emphasize a distinguishing feature of the invention; Claims 11-12 and 14-15 are amended to be directed to apparatus rather than methods, to be consistent with the independent claims from which they respectively depend; various claims are amended to be more readable, for example, by correcting spelling errors or clarifying minor antecedent basis issues, these amendments not being for reasons related to patentability.

In the Office Action dated March 21, 2001, Claims 1-9 were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,715,424 (Jesionowski *et al.*) in view of U.S. Patent No. 5,844,883 (Kanno *et al.*); Claims 1-17[2] were rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,432,769 (Honjo) or U.S. Patent No. 5,634,031 (Sakuma) in view of Kanno *et al.*

Concerning the rejection of Claims 1-9, the portion of the Jesionowski *et al.* patent to which the Office Action refers,[3] merely discloses that successive data may be written in different tracks, such as first, second and third tracks. Paragraph 2 of the Office Action correctly admits that the Jesionowski *et al.* patent does not disclose or suggest that first and second tracks have a common address as required by Claims 1-9; for this teaching, the Office Action cites FIGS. 13, 14 and 16 of the Kanno *et al.* patent.

However, significantly, Jesionowski *et al.* do not appear to teach that the alternate tracks are *adjacent and commonly-addressed tracks* as required by Claims 1 and 5. Jesionowski *et al.*

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[2]It is assumed that only Claims 10-17 were intended to be rejected, since there is no reference to the limitations of Claims 1-9 in the explanation of rejection.

[3]Jesionowski *et al.*; column 1, lines 44-43.

are concerned with reducing the number of passes needed to erase, write and verify, by using a caching and destaging process in which the passes are made per *track* rather than per *block.* Accordingly, there does not appear to be a disclosure, teaching or suggestion in the Jesionowski *et al.* patent to alternate between *adjacent* tracks as required by Claims 1 and 5, to take advantage of the common addressing scheme in high-density disks. The Kanno *et al.* patent does not appear to overcome the shortcomings of the Jesionowski *et al.* patent concerning the *combination* of limitations recited in Claims 1 and 5, despite its teaching of alternating wobbled and straight grooves and shared addresses.[4]

Moreover, by the present amendment, Applicants have amended independent Claims 1 and 5 to recite additional method steps or additional limitations on an apparatus "means" recitation. For example, Claim 1 now recites alternate steps of writing, accessing, writing, accessing, and repeating these four steps until a recordable region is consumed. Applicants respectfully submit that these newly-added limitations are not disclosed in or properly suggested by the cited references. Accordingly, independent Claims 1 and 5, and their dependent Claims 2-4 and 6-9, are submitted to be allowable, and reconsideration and withdrawal of the rejection of Claims 1-9 are respectfully requested.

Applicants respectfully traverse the rejection of Claims 10-17 without substantive amendment.

Concerning operation of the recording apparatus and method of Claims 10 and 16, the Office Action cites a portion of the Honjo patent, part of which states:

> In FIG. 1, if the detection circuit 14 detects that the amount of coded video data stored in the buffer circuit 2 exceeds ***a predetermined value***, the stored data is read out from the buffer circuit 2 and is recorded on the recording medium 7 for a constant period of time. Thereafter, if the amount of coded video data

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[4]Kanno *et al.*; column 14, line 23 *et seq.*

> stored in the buffer circuit 2 is smaller than ***the predetermined value***, the stored data is not read out and not recorded but rather the circuit waits for the amount of stored data to exceed ***the predetermined value***. Here, the detection circuit 14 may detect the stored amount of data by comparing, for example, the writing address and reading address of a memory of the buffer circuit 2.[5]

First, Applicants note that Honjo have only a single "predetermined value" governing when data is read from buffer 2, whereas independent Claims 10, 13, 16 and 17 require both a first predetermined value ***and a second predetermined value smaller than the first predetermined value.*** Thus, a specifically-recited claim limitation is not found in the Honjo patent.

Moreover, whereas the Honjo patent mentions amounts of stored data, the different rates at which data is transferred into and out of the memory do not appear to be mentioned. The Honjo patent's only apparent mention of data rates is based on amount of incoming video data to a recording medium, and not, as claimed on a difference between a higher read rate and a lower write rate with respect to a memory. In particular, Honjo discloses:

> As explained above, with the optical disk apparatus of this invention, and maximum ***transfer rate*** to and from ***the recording medium*** may be determined to transfer a block of variable length coded video data having a maximum amount of data. When the amount of data is small, the recording or reproducing operation is stilled for a predetermined period of time, for example, one track scanning time interval for waiting. As a result, in a case when a small amount of data such as data of an image whose movement is less, for example, is to be reproduced, the reproduction is carried out in an intermittent feeding manner in which the still is to be carried out largely, resulting in a vase increase in the time capable of recording onto and reproducing from the disk.
>
> In addition, in a case when a large amount of data such as data of an image whose movement is greater, for example, is to be processed, ***a high transfer rate*** can be realized by recording onto and reproducing from the track in a successive manner, thus making possible for no degradation of the image quality to occur.[6]

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[5]Honjo; column 2, lines 55-68 (emphasis added).

[6]Id., column 4, lines 49-68 (emphasis added).

Applicants respectfully submit that this does not disclose or suggest the claimed requirement of "reading out data from the memory means at a second transfer rate higher than the first transfer rate." Paragraph 3 of the Office Action indicates that the memory stores "an input data inherently at a first rate" and implies that the data is read out at a second rate higher than a first rate, but a closer study of the Honjo patent does not yield such a teaching.

Therefore, the Honjo patent appears to teach neither the different first and second data amount "predetermined values" nor the different first and second transfer rates into and out of a memory:

> a memory controlling means for detecting when the data amount stored in the memory means has exceeded ***a first predetermined value***, reading out data from the memory means at ***a second transfer rate higher than the first transfer rate*** and stopping the data read-out from the memory means when the data amount stored in the memory means has reached ***a second predetermined value smaller than the first predetermined value***;[7]

Similar comments apply to reproducing apparatus and method claims 13 and 17 as apply to the foregoing comments focusing on the recording apparatus and method of Claims 10 and 16, respectively. Accordingly, all of Claims 10, 13, 16 and 17 and their dependents are submitted to be allowable over the Honjo patent.

The Office Action refers vaguely to all ten drawing figures in the Sakuma patent.[8] Accordingly, it is impossible to respond with specificity to the rejection, without knowing which elements and teachings are supposed to correspond to Applicants' claim elements and features. However, the portion of the Sakuma patent that appears to most closely correspond to a memory is the storage circuit (buffer memory) 9. Concerning element 9, the Sakuma patent states:

> The vibration-resistant memory controller 8 has the function of accumulating the data inputted for regeneration and sent from the EFM/CIRC

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[7]Claim 10 (amended) (emphasis added).

[8]March 21, 2001 Office Action; page 4, lines 7-9.

modulation/demodulation circuit in the storage circuit 9, such as a buffer memory, and the readout function for sending compressed data to an ATRAC modulation/demodulation circuit 10 to demodulate the data. The ATRAC modulation/demodulation circuit 10 demodulates the compressed data, sends the demodulated data to a DAC (digital-analog converter) 12, and outputs an audio output to a reproduction output terminal 13.

The way of a recording signal will now be described below. A record audio input signal is inputted from an input terminal 14 and converted into digital data by an ADC (analog-digital converter) 11. The digital data is converted into the above compressed data by the ATRAC modulation/demodulation circuit 10 and stored in the storage circuit 9 through the vibration-resistant memory controller 8 as record compressed data. When the data is stored in the storage circuit 9 up to a predetermined quantity, record data is recorded in the MD1. That is, the vibration-resistant memory controller 8 reads stored data out of the storage circuit 9 and outputs the data to the EFM/CIRC modulation/demodulation circuit 7.[9]

Thereafter, the system controller 15 in FIG. 1 receives a recording start instruction from the operational section 28 to perform the operation to start recording. That is, the controller 15 starts converting a record input signal sent from the audio signal input terminal 14 in FIG. 1 into digital data, using the ADC 11, and storing data, obtained by compressing and converting record digital data, in the storage circuit 9 using the vibration resistant memory controller 8 through the ATRAC modulation/demodulation circuit 10.

Recording is started from the start address G of the empty block B4 of the MD1 shown in FIG. 3 until a predetermined quantity of record data is stored in the storage circuit 9. The flow of record data to be recorded in the MD1 has been previously described. While input data is being recorded in the MD1, it is a matter of course that record data to be inputted is stored in the storage circuit 9. As described in the section of the Related Art, data is intermittently recorded in the MD1 because the transfer rate of the recorded compressed data compressed up to approx. 1/5 to the MD1 is 0.3 Mbits/sec, though the transfer rate of the input signal to the ADC 11 is 1.4 Mbits/sec.[10]

Applicants submit that this disclosure in no way suggests the *combination* of limitations concerning first and second predetermined values, and first and second transfer rates, recited in Applicants' independent Claims 10, 13, 16 and 17. Moreover, Sakuma does not appear to teach that a head is moved from one to another of a pair of adjacent tracks during recording or reproducing, as is also required by the independent claims. Accordingly, all of Claims 10, 13,

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[9]Sakuma; column 7, line 55 through column 8, line 10.

[10]Id., column 10, lines 3-23.

16 and 17 and their dependents are submitted to be allowable over the Sakuma patent. The Kanno *et al.* patent does not overcome the shortcomings of either the Honjo or Sakuma patents discussed above, and accordingly the rejections under 35 U.S.C. § 103(a) are believed to be improper and should be withdrawn.

If the examiner persists in rejecting any claim, it is respectfully requested that a specific, one-to-one relation be pointed out, between Applicants' claim elements and features, and any applied references' structures and teachings.

In any event, in view of the present amendment and in light of the foregoing discussion, it is respectfully submitted that the pending claims are allowable and that the case is in condition for allowance. An early and favorable action to that effect is respectfully requested.

Respectfully submitted,

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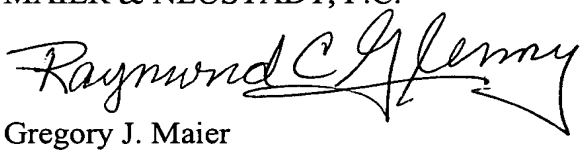

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ATTACHMENT

SHOWING CHANGES TO APPLICATION

1. (Amended) A recording method in which data is written to a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising the steps of:

a) writing a data blocked to a predetermined length to one of the pair of tracks;

b) accessing the other track having the common address after the writing [e] of the data blocked to the predetermined length to the one track; [and]

c) writing a new data blocked to [a new] the predetermined length to the other one of the pair of tracks; [after the access to that track]

d) accessing the one track having the common address after the writing of the new data blocked to the predetermined length to the other of the pair of tracks; and

e) repeating the steps a), b), c) and d) until a recordable region on the pair of concentric or spiral tracks is consumed.

5. (Amended) A recording apparatus adapted to write data to a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising:

means for blocking an input data to a predetermined length;

means for writing the blocked data to the disc;

means for accessing the tracks; and

means for controlling the [recording] accessing means to access one of the pair of tracks and the writing means to write the blocked data to the one track, and then to control the accessing means to access the other one of the pair of tracks that has the common address after the writing [e] to the one track and to control the writing means to write a new data blocked to [a new] the predetermined length to the other track, and to control the accessing and writing means to alternately access and write to the one track and the other track until a recordable region on the pair of concentric or spiral tracks is consumed.

10. (Amended) A recording apparatus adapted to write data to a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising:

a memory means for storing an input data once at a first transfer rate;

a memory controlling means for detecting when the data amount stored in the memory means has exceeded a first predetermined value, reading out data from the memory means at a second transfer rate higher than the first transfer rate and stopping the data read-out from the memory means when the data amount stored in the memory means has reached a second predetermined value smaller than the first predetermined value;

a writing means for writing data read out from the memory means;

a recording means movement controlling means for moving, while the data read-out from the memory means is being stopped, the writing means from one of the pair of tracks to which the data read out from the memory means has been written to the other one of the pair of tracks; and

a writing means controlling means for stopping the writing means from writing while the data read-out from the memory means is being stopped.

11. (Amended) The recording [method] apparatus as set forth in Claim 10, wherein one of the pair of tracks is a land of which one wall face is wobbled at a predetermined period while the other wall face is flat.

12. (Amended) The recording [method] apparatus as set forth in Claim 11, wherein the other one of the pair of tracks is a land of which one wall face is flat while the other wall face is wobbled at a predetermined period.

13. (Amended) A reproducing apparatus adapted to read data from a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising:

means for reading data from the disc;

a memory means for storing the data read out from the memory means once at a first transfer rate;

a memory controlling means for detecting when the data amount stored in the memory means has exceeded a first predetermined value, reading out data from the memory means at a second transfer rate higher than the first transfer rate and stopping the data storage into the memory means when the data amount stored in the memory means has reached a second predetermined value smaller than the first predetermined value; and

a [writing] reading means movement controlling means for moving, while the data storage into the memory means is being stopped, the reading means from one of the pair of tracks from which the data has been read to the other one of the pair of tracks.

14. (Amended) The recording [method] apparatus as set forth in Claim 13, wherein one of the pair of tracks is a land of which one wall face is wobbled at a predetermined period while the other wall face is flat.

15. (Amended) The recording [method] apparatus as set forth in Claim 14, wherein the other one of the pair of tracks is a land of which one wall face is flat while the other wall face is wobbled at a predetermined period.

16. (Amended) A recording method in which data is written to a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising the steps of:

storing an input data into a memory [once] at a first transfer rate;

firstly judging that the data amount stored in the memory has reached a first predetermined value;

reading out data from the memory at a second transfer rate higher than the first transfer rate when it is judged at the first judging step that the data amount stored in the memory has reached the first predetermined value;

secondly judging that the data amount stored in the memory has reached a second predetermined value smaller than the first predetermined value;

stopping the data read-out from the memory when it is judged at the second judging step that the data amount stored in the memory has reached the second predetermined value;

moving a write head from one of the pair of tracks to which data has been written to the other one of the pair of tracks while the data read-out from the memory is being stopped; and

stopping the write head from writing while the data read-out from the memory is being stopped.

17. (Amended) A reproducing method in which data is read from a disc having formed thereon a pair of concentric [al] or spiral tracks adjacent to each other and to which a common address is given, comprising:

reading data from the disc using a read head;

storing the data read out from the disc into a memory [once] at a first transfer rate;

detecting when the data amount stored in the memory has exceeded a first predetermined value and reading out data from the memory at a second transfer rate slower than the first transfer rate;

stopping the data storage into the memory when the data amount stored in the memory has reached a second predetermined value larger than the first predetermined value; and

moving, while the data storage into the memory is being stopped, the read head from one of the pair of tracks from which the data has been read to the other one of the pair of tracks.